IMPACT OF MICROFINANCE ON RICE PRODUCTION IN MYANMAR

By

AUNG, Swe Zin

THESIS

Submitted to
KDI School of Public Policy and Management
in partial fulfillment of the requirements
for the degree of

MASTER OF DEVELOPMENT POLICY

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Committee in charge:

Professor Young Jae LIM, Supervisor

Professor Jong Il YOU

Professor Jin Soo LEE

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ABSTRACT

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By

Swe Zin Aung

Microfinance has emerged as a tool for reducing poverty in developing countries. Dr. Muhammad Yunus developed microfinance and he founded the Grameen Bank. In 2006, Yunus and Grameen Bank were awarded the Nobel Peace Prize for their work to promote economic and social development. Its main motivation is to contribute to proverty reduction by giving loans to poor people in Bangladesh and ultimately in the whole world.

More than 70 percents of the total population reside in the rural areas and engaging in agricultural sector. Since the economy of Myanmar heavily depends on the agricultural sector, rural development is the fundamental concern for the country. Moreover, since rice is the staple food and the main export product of the country, rice production efficiency is an essential factor in the country. Although loans and some inputs subsides are provided to the farmers, the loan available to farmers is limited, and it covers only fews percent of total land area.

Despite most research previously done on microfinance revealed positive impact, some studies argued negative impact of microfinance. This study analyses the impact of microfinance on small holder farmers who produce paddy with a case study. The data were analyzed based on a 100 sample farmers and they are divided into two groups, who access microfinance (Credit Beneficiaries) and another group cannot access (Non Credit Beneficiaries). T-test is applied to test the difference between mean rice production produced by two farmer groups. The linear

regression model is used to analyze the impact of input variables which are used in rice production process.

The study finds that microfinance largely contributed to rice production and also highlights the importance of microfinance and input variables on the production of rice. Additionally, credit beneficiaries group finds it relatively easy to access agricultural markets. Since credit constraints reduce the economic efficiency of farmers to produce rice it is recommended that formal private lending should be encouraged to ensure with fair interest rates.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

I. INTRODUCTION

1.1 Research Background

Microfinance is the provision of of financial services such as microcredit, microinsurance and microfinance to poor people. Myanmar economy has an agro-based economy and generates 10 percent of its foreign exchange from exporting agricultural products (Custom Department, Myanmar, 2014). Since the country's development is mainly based on rural development, agricultural development is an important factor to reduce poverty. In this recognition, the government encourages the development of micro saving and credit enterprise to provide microfinance for small holders farmers to improve the socioeconomic status of rural people.

Muhammad Yunus (1976) defined Microcredit as, "a means of extending credit, usually in the form of small loans with no collateral, to nontraditional borrowers such as the poor in rural or undeveloped areas". According to Ledgerwood (2002), "Microfinance is the provision of a broad range of financial services such as deposits, loans, savings, payment services, money transfers, and insurance to the poor and low-income households and their micro-enterprises who are excluded from the formal financial systems." (as cited in Giradi and Mwakeje, 2013, p.227). Loans are then repaid in installments.

1.2 Problem Statement

The agriculture sector is the mainstay of Myanmar's economy and it contributes around 30 to 40% of Gross Domestic Product (The World Bank Group, 2014)[1]. Rice is the staple food of Myanmar and also one of the main export products. Since the country's development is mainly based on rural development, agricultural development is an important factor in reducing poverty. The main problem is the lack of extension services available to farmers and this results

[1] The World Bank Report. Myanmar Agricultural Development Bank:Initial Assessment and Restructuring Options, 2013, p.7
http://www-ds.worldbank.org/external/default/WDSContentServer/WDSP/IB/2014/04/09/000333037_20140409113021/Rendered/PDF/866300Revised0000MADB0Final0April08.pdf

in low profitability. Farmers always suffer from purchasing agricultural inputs such as seeds and fertilizers. Most farmers in Myanmar use their own seeds and less technical advice in agriculture.

Now a day, there are various types of mechanisms for informal money lending. For example, money borrowing may be connected to bank broker or real estate business. These include linkage services between such broker services regularly include intermediation between loan banks and borrower. In informal lending markets, interest rates may vary from 3% to 8%, depending on the depend on the type of collateral placed ((Forech, Thein, Waldshmidt, 2013, p.17)[2]. The usual repayment period is between three to six months and sometimes it may be extended. However, many people who access these loans resort to selling property to make repayments due to short repayments periods.

The government, therefore, allowed the provision of micro-lending and savings services to people in rural areas who otherwise had no access to banking services. The government provided input subsidies, including a money pool as contribution to the sector. Borrowers accessed loans with much lower interest rates than they would pay to the informal money lenders. However, microfinance is still limited and its impacts are not clear. According to Ko Ko (2013) "Microfinance to farmers might satisfy urgent needs, but not improve the socioeconomic lives of farmers in the long run and that might lead to debt burdens.

According to Buckley and Rogaly (1997;1996), "Although microcredit has claimed more and more of the aid budget, it may not always be the best way to help the poorest. Is public support for microcredit wasted or worthwhile?" According to Sebstad, Neill, Barnes & Chen and Von Pischke & Adams (1995;1980), "Most measures of the impact of microfinance organizations

[2] Giz, Myanmar's Financial Sector:A Challenging Environment for Banks. http://www.oilseedcrops.org/wp-content/uploads/2014/03/Myanmar%E2%80%99s-Financial-Sector-The-Banking-Environment-2014.pdf

fail to control for what would have happened in their absence. If users borrow more than once, then they must perceive that they can get benefits" (As cited in Gonzalez-Vega, Schreiner, Meyer, Rodriguez- Meza & Navajas, 2000, p.334). However, the question, in this case, is whether or not microfinance is better than nothing for its users. Sometimes farmers use it for other urgent needs rather than agricultural use.

1.3 Research Objectives

The overarching objective of this study is to analyze the impact of microfinance on the rice production in Myanmar using a case study. Specifically the study intends to:

(a) Investigate the levels of credit volume by farmers

(b) Analyze the impact of microfinance on rice production and;

(c) Access the impact of microfinance on market accessibility by farmers who were credit access.

1.4 Research Questions

Based on research objectives, the following research questions are

(1) What is the impact of microfinance on the productivity of rice?

(2) What are the underlying factors contributing to increase in the production of rice?

(3) How important is microcredit in improving farmers' income?

1.5 Rationale of the Study

The new government was democratically elected in 2010. In transforming period, the new government has committed to accelerate poverty alleviation and rural development. Myanmar's economy is agro-based and agricultural sector contributes around 40% of GDP.

Most of the export products are based on agriculture. However, progress in agriculture has been constrained by micro-instability, infrastructure constraints, land, marketing and financial issues, and farmers' lack of access to quality research (Framework for Social and Economic Reform, 2012, p.35)[3]. Poor agricultural performance has consequently, impacted negatively on the overall development of the rural sector.

To support agricultural development, Parliament enacted new land laws giving titles to farmers and encouraging the development of fallow land for agricultural use, and a new microfinance law to improve access to finance. The government endorsed provision of microcredit and savings services to people in rural areas.

Although some studies have assessed the impact of microfinance on rural development, most of them have been focusing on poverty eradication, empowering women by participating in microfinance program and rural development. In summary, there is inadequate empirical evidence on the impact of microfinance on the rice production in rural area where the majority of low income farmers live. This study, therefore fills that void in existing literature on the impacts of microfinance on rural development.

1.6 Outline of Thesis

This Thesis is divided into five main chapters. The first chapter provides a brief introduction about the relationship between microfinance and production of rice, a statement of problem to be studied, objectives of study, research questions and rationale of the study.

The second part undertakes the literature review. The third chapter describes conceptual

[3] Framework for Social and Economic Reform, 2012. http://www.industry.gov.mm/sites/default/files/tender/2014/05/framework_for_economic_and_social_reforms_english_draft.pdf

frameworks, research methods and research methodology. The fourth chapter presents and highlights the results of analysis. The results of the study and findings are discussed. The fifth and final chapter outlines the conclusions of the study and makes recommendations for the development of microfinance enterprise that affects the production of rice.

II. Literature Review

The impact of microfinance emerged over the last few years offers some encouraging results. There is proof from various studies proposing that microfinance is helpful for destitute people. This result is observed across different microfinance services, including microcredit and microsavings instruments.

According to Oterro (1999), " microfinance is the provision of financial services to low-income people and very poor self-employed people". Ledgerwood (1999) defined microfinance that, " Financial services are not limited to savings and credit, but include other financial services such as insurance and payment services". According to Robinson (2001), "the supply of loans, savings and other basic financial services to the poor. According to Irobi (2008), "microfinance is an economic development model intended to benefit the low-income part of society". "Microfinance is the attempt to improve access to small deposits and small loans for poor households neglected by banks" Schreiner and Colombet (2001).

Although Khandker (2005), Mosley (2001) and Pitt and Khandker (1998) all conclude that microfinance increases income and consumption of poor people. However, Morduch and Roodman (2009) and Coleman (1999), found different results. From these case studies, it is unclear whether microfinance improves the socioeconomic conditions of poor people in developing countries. Recent empirical analyses have begun to investigate the impact of microfinance on poverty and income inequality using multi-country data (Imai et al 2010, Kai and Hamori ,2009).

Among the referenced literature, some groups, especially studied the research from a macro viewpoint, is most closely related to the present analysis. Kai and Hamori (2009) used cross-sectional data from 61 countries to examine the impact of microfinance intensity on income inequality,focusing on the magnitude of microfinance intensity by the number of

borrowers from microfinance institutions and the number of microfinance institutions. They regressed the Gini coefficient on microfinance intensity and a set of control variables, including real GDP per capita and GDP-squared and found that “microfinance intensity in terms of the number of MFIs or borrowers from MFIs has a significant negative relationship with income inequality.”

In this way, microfinance is the provision of financial services to poor people who cannot get microfinance such as microcredit, microsavings, and micro insurance from the formal financial sector. Some discussed that: “Microfinance has improved the financial results, such as savings, accumulation of assets and socioeconomic condition or poor people such as health, education, women’s empowerment, job employment and food security” (Beck, Demirguc-Kant, & Levine, 2004; Hietalahti & Linden, 2006; Hossain & Knight, 2008; Odell, 2010).

“Although the development and success of microfinance, no clear results yet exist that microfinance programs have a positive impact” (Armendáriz de Aghion and Morduch 2010). Although Sebstad and Chen 1996, Gaile and Foster 1996, Goldberg 2005, Odell 2010and Orso 2011concluded that “microfinance can make a real difference to poor people’s lives” Armendáriz de Aghion and Morduch 2005 revealed that “impact of microfinance is still limited and inconclusive”.

Inouea and Hamorib (2013), analyzed data from 76 developing countries from 1995 to 2008, on whether the development of the microfinance sector is beneficial to poorer populations by expanding national microfinance networks and by making more money available to low-income households. The empirical analysis showed that the expansion of microfinance activities contributes to alleviating poverty at the macro level. And that empirical evidence indicates that financial permeation indeed contributes to reducing poverty across the world.

Research by Lhing, Ogundari and Nansekiet (2011) used Endogenous Switching Regression to assess the welfare effects of microfinance program in Myanmar. A sample of 431 respondents [311 (participants) and 120 (non-participants)] was drawn and utilized. The study used 2 indicators of household welfare, namely; household per capita expenditure and per capita income. The results showed that the covariance term of participation in the microfinance program was significant. Furthermore, the empirical results showed that the probability of participating in microfinance program is associated with being a female household headed, higher educational level for the household head, marital status (married), higher number of crops and higher wealth (represented by the number of video compact disc players) in the study.

The empirical results implied that participation in the microfinance program has a positive effect on poverty reduction in Myanmar as it raises household income and consumption level in the study areas.The substantial increase in the per-capita income and per-capita expenditure for the participating households may largely be due to the support services received by the respondents from the microfinance institutions, which basically includes provision of microcredit to help improve welfare of the households.

Gilbert O. Boateng et al (2013) analyzed the relationship between microfinance and poverty reduction in Ghana. The study used individual income, family growth, access to education, housing and social and religious activity participation to evaluate the impact of microfinance on poverty. Using data collected from 60 customers and beneficiaries of microfinance, the survey found a positive relationship between microfinance and the selected variables.Training for beneficiaries was recommended to assure more effective utilization of microfinancing and creation of sound political and economic environments for microfinance enterprises to succeed.

Murdoch (2002) carried out a study on microfinance and poverty alleviation. He used assets, education, microcredit and family size as independent variables, and household's income as dependent variables. These results mean that there is a a positive impact of microfinance on poverty. Littlefield, Morduch and Hashemi (2003) revealed that there have been positive effects on income and assets, and decreases in the accountability of microfinance clients. Their conclusions are based on projects implemented in India, Indonesia, and Uganda that have demonstrated impact in reducing poverty and improving wellbeing.

Asemelash (2002) in Ethiopia studied impact of microfiance by dividing two groups and confirmed a positive impact of microfinance on credit beneficiaries as compared to non-beneficiary groups. He proved that microfinance has positively impacted on income, assets, and admittance to schools and medical facilities in the survey region.

Goldberg (2005) observed that with the introduction of microfinance in Bangladesh, the poor no longer remained poor. Mawa (2008) confirmed that microfinance is an important step towards poverty reduction. In Ghana, evidence exists on the positive impact of microfinance generally on women empowerment, increase in decision rights within the family for women and self-esteem also increased. (Cheston and Kuhn, 2002).

In conclusion, microfinance has shown to be a powerful tool by many studies conducted in different countries and that it needs to be complemented with other growth, proverty reduction, financial sector development, human capital, infrastructure building , and conventional job creation policies. Currently, hundreds of millions of people depend in part on microenterprises and, helping them to become more efficient is a very important strategy. "Provision of lending, saving and insurance services can, therefore, provide broad benefits for people living in poverty." (Morduch 1997, 1999, Armendriz de Aghion and Morduch, 2000)

However, empirical results in Bolivia (Sergio, Mark, Richard and Claudio, 2000) showed some of the negative effects of microcredit on the poorest of the poor. They highlight the need for more scrutiny of the flood of funds budgeted in the name of access to loans for the poor. Other Scholars pointed out that even when microcredit does reach the poorest, it may not increase incomes, but just smooth the consumption and income allocation. (Mosley & Hulme, 1998; Morduch, 1998).

Agricultural loans are almost invariably not spent on the agricultural purpose, but on general consumption or on a TV, repaying another loan from different banks, of paying other debts. Therefore, The advantages of the loan rapidly disappear. This often encourages the borrowers to acquire another credit to meet the repayments, usually from the various moneylenders the microfinance community claims to replace.

It might be more beneficial to explore alternative interventions that could best benefit poor people. Microfinance activities have affected significantly on development resources, both in terms of finances and lives of poor people. Microfinance activities are extremely attractive, not only for the development industry, but also to mainstream financial institution and business interests with little participation in poverty reduction. Still, it remains unclear microfinance has been beneficial to poor people and under which conditions.

The literature has shown mixed evidence about the causal relationship between microfinance and poverty reduction. Some empirical studies show evidence of positive impact while others scholars highlighted that microfinance activities left the poorest of the poor worse off.

III. COUNTRY BACKGROUND

Table 1: Key Economic Indicators for Myanmar

Category	Year						
	1980's	1990's	2000's	2010	2011	2012	2013c
GDP ($ billion current	5.6	6.8	16.1	49.6	56.2	55.3b	59.4
GDP per capita ($, current)	149.6	150.1	291	742	900	907b	915
GDP growth (% in constant prices)	1.8	5.5	4.7	5.3	5.9	6.5	6.8
Agriculture	2.0	4.9	9.1	4.4b	4.4c	4.5c	-
Industry	-2.0	9.2	18.7	6.3b	6.5c	7.5c	-
Services	1.4	6.2	11.9	6.1b	6.3c	7.1c	-
Unemployment Rate (%)	-	4.1	4.0	4.0	4.0	4.0	-
Gross Domestic Investment (% GDP)	-	13.0	13.4	23.2	29.1	30.3	-
Gross Domestic Savings (% of GDP)	-	12.3	13.4	-	-	-	-
CPI (annual % change)	9.7	26.5	19.5	8.2	2.8	2.8b	5.6
Domestic Credit (annual % change)	12.4	28.5	29	34.4	25.1	6.2b	29.2
Domestic Credit (% of GDP)	57.7	34.3	24.5	26	29.9	29	33.2
Government Revenues (% of GDP)	8.5	7.4	9	11.4	12	23b	23.4
Government Expenditure (% of GDP)	11	9.2	14.9	16.9	16.6	26.6b	28.4
Overall fiscal surplus (deficit) (% of GDP)	(2.4)	(1.8)	(2.9)	(5.5)	(4.6)	(3.7)b	(5.0)
Categories	Year						
	1980's	1990's	2000's	2010's	2011	2012	2013c

Exports (million $)	-	1,038	41,33	7,896	9,427	9.644	11,276
Exports (% of GDP)	5.5	1.0	7.7	17.4	17.9	18.6b	19.9
Imports (million $)	-	(2,069)	(3,418)	(7,488)	(9,795)	(11,666)b	(12,919)
Imports (% of GDP)	(9.3)	(1.9)	(7.0)	(16.5)	(18.6)	(22.5)b	(22.8)
Merchandise trade balance (% GDP)	(3.8)	(0.9)	0.7	0.9	(0.7)	(3.9)b	(3.0)
Current account balance (% GDP)	(0.9)	(0.7)	(1.3)	(1.9)	(2.4)	(4.4)b	(4.3)
External debt service (% of exports of goods and services)	48.6	12.9	2.6	7.6	10.7	2.2b	4.2
Foreign exchange reserves (millions) (months of imports)	118	320	1,381	3,754	4,026	4,599b	5,537
Official exchange rate (Kyat/US$)d	7.3	6.1	6.0	5.4	5.6	880.0b	-
Parallel effective exchange rate (Kyat/ US$)d	-	-	1,035	861	822	878b	-

Source: ADB, 2014

3.1 Agricultural Sector Background

In 2010, about 63% of people in Myanmar were involved in agriculture percent of the

population was engaged in the agriculture sector. This percentage was 61.2 percent in 2014 (Ministry of Agricultural and Irrigation, Myanmar, 2014) and 67 percent in 1980. These figures indicate that Myanmar's economy still depends largely on agriculture sector. Myanmar's share of the agriculture sector to total GDP was 46.54 percent in 1980 and increased to 60.1 percent in 1995 and decreased again to 57.23 percent, 42 percent and 36 percent in 2000, 2005 and 2010, respectively.Although the agricultural sector share decreased to around 304.8% in 2013, (Ministry of Agricultural and Irrigation, Myanmar) the figures also indicate that the sector still remains the most important for Myanmar's economy.

By exporting around 3 million MT annually, Myanmar was considered the "rice bowl" of Asia in the 1930s (Nay Myo Aung, 2012, p.1). The largest enrollment of fertile land with abundant rural labor force places agricultural and agricultural activities as the backbone of the economy. The agriculture sector contributes around 30 to 40 percent of Myanmar's Gross Domestic Product (World Bank report, 2014). It plays an important role in Myanmar through ensuring domestic food security, generating farm incomes, increasing disposable rural incomes through surplus production and diversified crops and releasing surplus labor to fulfill other labor market demands and opportunities. Agricultural sector, therefore, will have an essential role in the context of economic development and poverty reduction in the country for the future.

Despite Myanmar being considered the "rice bowl" of Asia, its agricultural performance has dropped over the years, largely linked to decades of extensive government controls – including procurement quotas, controlled prices and a monopoly on exports – and public and private under-investment in the sector (OECD Investment Policy Reviews: Myanmar 2014, p.292). Nonetheless, recent economic reforms offer new hope for , Myanmar's agricultural sector to bounce back as a priority sector. Reforms particularly focus on boosting rice, oilseed

and bean production to supply the domestic market and increase agricultural exports.

3.2 Rice Production in Myanmar

According to UNCAD, globally, rice is the second largest crop grown and the annual rice production was around 350 million tons at the beginning of 1990, and by the start of 20th century it had reached 410 million tons. A lot of this rice is grown in Asia which accounts for over 90% of rice output. International rice trade is estimated from 25 to 30 million tons per year, corresponding to only 5 to 6 percent of world production . Rice trade is also expected to continue to increase by an estimated 3% annually (as cited in Nay Myo Aung, 2012,p.5)[4] .

In 1934, under British colonial rule, Myanmar exported 3.4 million tons of rice, setting a world record at the time for rice exports (OECD Investment Policy Reviews: Myanmar 2014, p.292)[5]. That quantity made Myanmar, the world's biggest rice exporter then, and even in today's globalized economy it is ranked ninth biggest exporter. While that high point of productivity was achieved under British dominion, it was sustained well beyond Myanmar's 1948 independence, with Myanmar remaining the world's leading exporter until 1963(Chanjaroen, 2012).

Nevertheless, from 1962 to 2003 the sector was centrally planned by military governments and performance dropped precipitously, to the point of periodic domestic rice shortages. In 2003, the government fully privatized the rice sector, as part of a larger trend towards market economics. Rice was one of the first sectors to be privatized in this manner, an indication of the government's confidence in the sector's high potential for development (Tin

[4] Nay Myo Aung,(2012). Agricultural efficiency of rice farmers and Millers in Myanmar Rice Industry. Institute of Developing Economics, Japan External Trade Organization, http://www.ide.go.jp/English/Publish/Download/Vrf/pdf/471.pdf

[5] http://www.oecd.org/daf/inv/investment-policy/Myanmar-IPR-2014.pdf

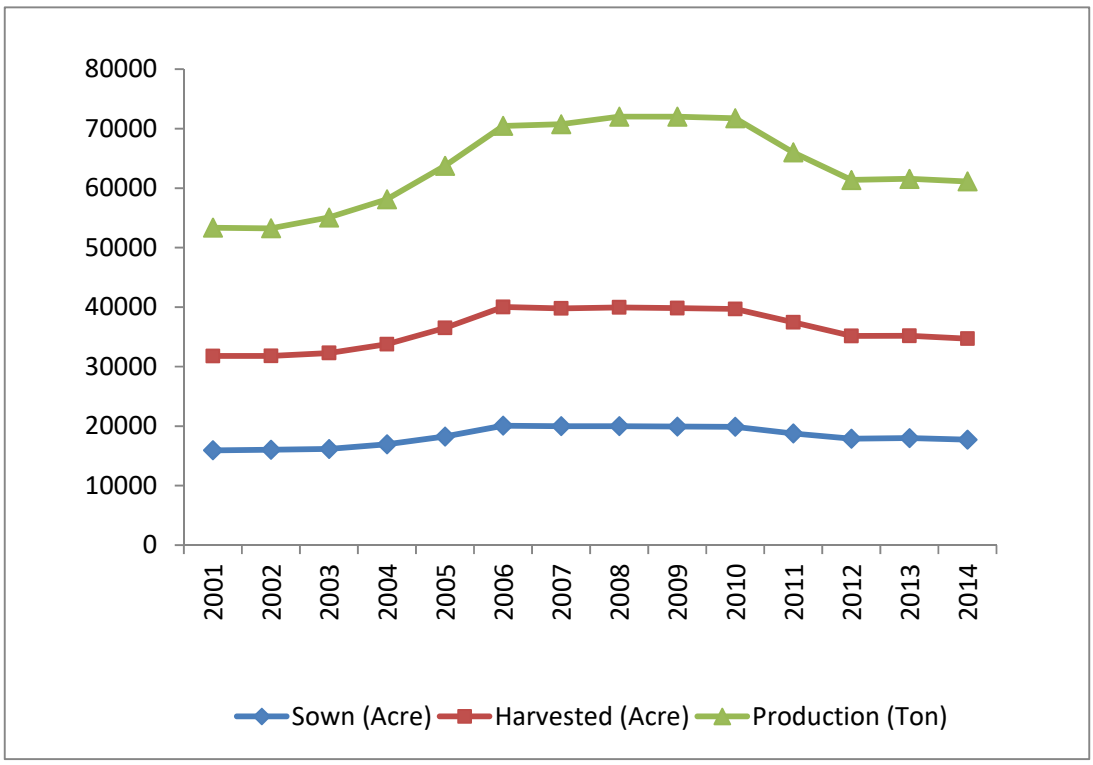
Soe, 2014,p.16)

Most of the export products are based on agriculture. Rice is the staple food of Myanmar and is also one of the export products. Paddy account for 95% of total agricultural production [6], ensuring food security and contributing a large proportion of the agricultural export. There is a lot of potential to improve rice production in Myanmar. Rice yield in on existing production fields can be improved, irrigation system can be modernized and land can be converted into rice cultivation.

Further, extensive adoption of modern and improved production technology can also boost the country's potential to improve rice production by expanding irrigated areas, increasing access to agricultural finance, intensive extension services and the availability of improved seed, fertilizer and allocation of tractors. The productivity of rice does vary among areas within the land based on the different agro-ecological zones and production systems employed. Rice production limitations are closely related. Stronger seedlings from high quality seeds, for example, will not increase production of rice without using enough fertilizer, and likewise rice crop cannot respond to fertilizer application if there is a shortage of water supply.

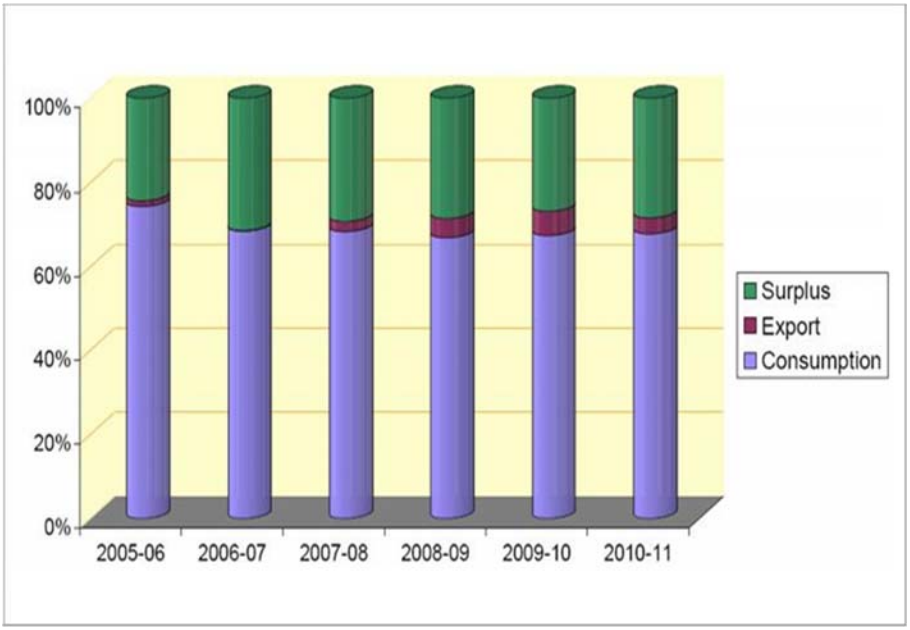
Figure 1: Sown, Harvested Area and Production of Paddy

[6] Data from Central Statical Organization (CSO, 2014)



Source :Ministry of agriculture (Myanmar)

Figure 2: The relative size of Myanmar's rice surplus, 2005-2006 to 2010-2011



Source: Ministry of Agriculture (Myanmar)

Agriculture is a crucial economic sector for most developing countries including Myanmar and over-reliance on few export products is a major challenge for almost all these countries (Nay Myo Aung, 2012). Johnston and Mellor (1961) stated increasing exports of agricultural products in one of the most effective mechanisms to increase income and foreign exchange in developing countries. In the international trade literature, various studies support this result (Michaely 1977; Feder 1983; Hsiao 1987; and Dutt and Ghosh 1996).

3.3 Rural Development and Poverty Reduction in Myanmar

The estimated total population of Myanmar is 52 million. More than 70 percent of the total population resides in rural areas which is double the population in urban areas, according to the Household Living Conditions Assessment (IHLCA) survey (2010)[7]. According to this survey,

[7] Integrated Household Living Conditions Assessment Ssurvey in Myanmar ,Technical Report 2009-2010 http://www.mm.undp.org/content/dam/myanmar/docs/Publications/PovRedu/MMR_FA1_IA2_Technical%20Report

the poverty rate of Myanmar declined from 32 % to 26 % between 2005 and 2010. Despite this improvement, 15.1 million people still do not have adequate food and basic needs. In addition, poverty incidence in rural areas is double that in urban areas. Therefore, rural development is a fundamental concern for the country.

Rural development is the improvement of socioeconomic conditions, including economic growth and development, such as the environment, health, education, infrastructure and housing. Since country development is mainly based on rural development, agricultural development is an important factor in reducing poverty.

The main problem for agricultural production is the lack of extension services available to farmers and it results in a lack of profitability. Farmers often depend on input providers and their advice when purchasing fertilizers or seeds. Many farmers use little or no fertilizer and use their own seeds and little or no technical advice.

3.4 Microfinance in Agricultural Sector

Myanmar's formal rural financial sector is undeveloped, and access to agricultural production credit is almost non-existent. And formal credit is not sufficiently available to farmers,. Although agricultural sector in Myanmar represents 30 to 40 percent of GDP and employs 61.2% of the population, only about 2.5% of all outstanding loans [8] is provided for this sector (World Bank, 2012).

The government adopted a new microfinance law in Novermber 2011, which allows domestic and foreign investment to establish private microfinance institutions. It provides the

-Eng.pdf

[8] Tun Min Sandar and Renate Kiloeppinger-Todd (2013, p.7). Rural Finance in Myanmar http://fsg.afre.msu.edu/Myanmar/myanmar_background_paper_3_rural_finance.pdf

legal framework for existing microfinance providers. Microfinance Supervising Enterprise is responsible for the supervision of the microfinance sector. It was newly established and formerly known as Myanmar Small Loan Enterprise.

The Central Bank of Myanmar, Myanmar Foreign Trade Bank, Myanmar Agricultural Development, Myanmar Economic Bank and Myanmar Investment and Commercial Bank are state-owned banks and twenty semi-government and private banks are operating financial services in Myanmar. Myanmar Agricultural Development Bank (MADB) is the second largest number of branches and mainly disburse loans for agricultural use and other banks operate commercial bank services rather than microfinance services for the agricultural sector.

3.5 Microfinance Institutions in Myanmar

The following are institutions that implement microfinance activities in Myanmar [9].

Government Organizations

(1) Myanmar Small Loan Enterprise (MSLE)

(2) Myanmar Agricultural Development Bank (MADB)

Non-Government Organizations

(1) Central Co-operative Association

(2) Myanmar Women Affairs Federation

(3) Union Solidarity and Development Association (USDA)

(4) Yangon City Development Committee (YCDC)

(5) Licensed pawn shops

International Non-Government Organizations (INGOs)

[9] Microfinance in Myanmar Sector Assessment. Eric Duflos, Paul Luchtenburg, Li Ren, and Li Yan Chen,2013,p.9. https://www.cgap.org/sites/default/files/Microfinance%20in%20Myanmar%20Sector%20Assessment.pdf

1) Private Agency Collaboration Together (PACT)

2) Group de rechercheet d' charger Technologies (France) (GRET)

3) Economic Development Association (EDA)

4) Grameen Bank (Bangladesh)

5) Save the Children

The rural and Agricultural financial services in Myanmar are provided by formal financial institutions; MyanmarAgricultural Development Bank, the Central Cooperatives Association, Myanmar Livestock and Fishery Development Bank, Non Government Organization and Local Microfinance Institutions.

Among the formal financial institutions, Myanmar Agricultural Development Bank is the largest in terms of the number of clients as well as the amount of loans disbursed for rural development. Table (2) shows the disbursement of loan, impacted area and client farmers . It has 220 branch banks all over the country. MADB currently offers interest rate of 8.5% per annum that is relatively low compared to the rates offered by other formal and informal institutions' (which range from 24% to 36%). MADB is a sole state-owned bank for agricultural development and it was formed by specialized law for the development of agriculture in Myanmar

The aim of MADB is to effectively support the development of agricultural, livestock and rural socioeconomic enterprises in the country by providing banking services. It is given a wide mandate to provide bank loans to state-owned agriculture and livestock organizations, private persons, entrepreneurs and cooperatives following simple procedures. However, the Bank's capital is insufficient and it has to borrow loan from Myanmar Economic Bank. Moreover, MADB can provide only Seasonal loans (mainly for Paddy) to rural farmers.

According to MADB Law, it has to contribute 75% of its net profit to the state. It recovered all the loans disbursed annually and NPL is 0.02% in 2012-13 Fiscal Year. Seasonal loans for production of some major crops, mainly paddy is provided. To access these loans, farmers have to be grouped into 5 to 10 members, and each must accept liability of their loan and that of the group members.. Under this arrangement, no other collateral is demanded. 100,000 Kyats (nearly 80USD) is disbursed production per acre and it is limited to 5 acres per farmer.

Table 2: Disbursement of Seasonal Loans made by MADB

Financial Year	Townships	Village	No of Borrowers	Acres	Amount

		Tracts	(Million)		(Kyat in Million)
2000-2001	204	8692	1.16	8680052	12149.19
2001-2002	205	8688	1.12	8950734	12740.81
2002-2003	205	8375	1.01	7628670	12015.31
2003-2004	205	8652	1.07	7146104	20416.25
2004-2005	205	8738	1.10	7285598	27382.18
2005-2006	205	8861	1.14	7749371	34390.26
2006-2007	205	8997	1.18	8385619	44875.80
2007-2008	205	9198	1.26	9482721	59627.84
2008-2009	205	9206	1.27	10002802	68970.07
2009-2010	205	9313	1.31	10514100	93489.29
2010-2011	205	9450	1.37	11257966	190679.89
2011-2012	205	9533	1.42	12462876	352721.75
2012-2013	206	9810	1.59	14390951	557846.54
2013-2014	NA	NA	NA	NA	1144394.98
2014-2015	NA	NA	NA	NA	1152404.44

Source : Department of Agriculture (Myanmar)

Table 3: Distribution of Fertilizer by government (in Matric Ton)

Period	Urea	T-Super	Potash	Compound	Other	Total

2000	239035	14633	9217	1286	-	264171
2004	4993	1839	1714	2669	-	11215
2005	5912	2092	1302	2456	-	11762
2006	8953	863	316	3480	-	13612
2007	6254	304	208	921	-	7687
2008	6622	234	205	3509	-	10570
2009	4770	208	140	1748	-	6866
2010	4588	171	182	766	-	5707
2011	924	127	86	616	-	1753
2012	21961	11580	5885	49748	4281	93455
2013	22597	11900	5449	29935	5087	74968
2014 (p)	10431	5208	2492	8304	2007	28442

Source : Department of Agriculture (Myanmar)

Table 4: Distribution of tractor by State and Region

By Region and State(1)	2000	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014

1. Mandalay	571	571	571	571	571	571	571	333	328	300	229	252
2.Naypyitaw	108	108	108	108	108	108	108	78	78	49	59	117
3.Magway	256	256	256	256	256	256	256	120	120	108	110	154
4.Saging	355	355	355	355	355	355	355	245	230	190	180	228
5. Kachin	125	125	125	125	125	125	125	134	130	116	113	78
6.Shan	177	177	177	177	177	177	177	164	156	166	179	202
7. Kayah	62	62	62	62	62	62	62	37	37	37	37	53
8. Kayin	21	21	21	21	21	21	21	21	20	22	25	32
9. Mon	140	140	140	140	140	140	140	68	61	58	57	82
10.Ayeyarwady	370	370	370	370	370	370	370	249	229	226	243	293
11. Rakhine	74	74	74	74	74	74	74	58	58	60	56	80
12. Bago	596	596	596	596	596	596	596	372	356	322	336	410
13.Yangon	172	172	172	172	172	172	172	128	126	138	141	152
14. Tanintharyi	13	13	13	13	13	13	13	17	17	17	17	22
Union	3040	3040	3040	3040	3040	3040	3040	2024	1946	1809	1782	2155

Source: Agricultural Mechanization Department (Myanmar)

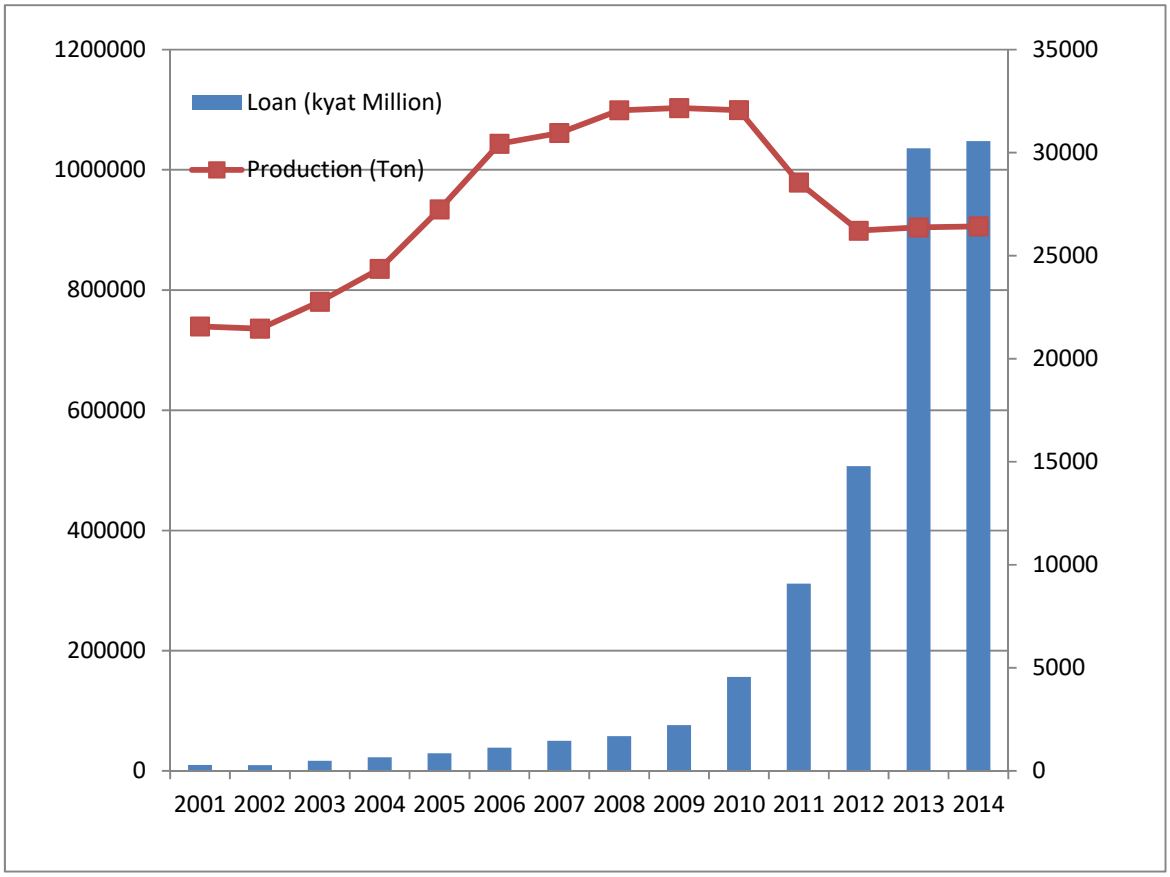
Table 5: Distribution of Quality Seed by Government

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014
391	59	46	47	-	79	102	105	120	277	168	111	104	118

Unit, Thousand of Basket

Source: Department of Agriculture.

Figure 3: Disbursement of Loan for Paddy made by MADB and Production of Paddy



Source :Ministry of Agriculture (Myanmar)

Financial savings are low in Myanmar and there is unclear documentation of savings

levels in the country in genral and in rural areas in particular. Savings products are not so attractive to financial instutions and clients alike. This is largely due to high transaction costs, especially in rural areas, and a minimum interest rate requirements on deposits. Less expensive funds from donors are also do not promote saving and, therefore, need to review utilization of such funds for lending. Technical assistance and training could be better strategies that MFIs can become more efficient (and less expensive) in providing their financial services, including for savings.

There is a lot of potential for growth of transfer and payment service business in Myanmar. However, a big limitation to this growth is lack of necessary technological infrastructure. Although mobile phone usage has increased over the years, high cost of usage and limited technology still hampers utilization of mobile money transfer (mobile-banking) service.

Many countries that decided to open up to the outside after years of restrictive economic policies has seen tremendous support largely through aid. There is a possibility Myanmar could follow in that direction. Consequently, most of the commercial financing from largely commercial banks, would be invested in less risky ventures such as mining or gas ventures and construction of residential condos, hotels and office buildings that can yield higher and faster gains that financing for agriculture. That would result into increased migration of people from rural to urban areas and leading into a wide range of socioeconomic problems. Therefore, creating jobs and business opportunities in the country-side and financing for them in rural areas could be a mitigant.

In Myanmar many farmers get trapped in recurrent credit and find themselves without land. The number of agriculture-dependent households without land is growing in the country.

Accessing financing is a big problem for many of the farmers with high interest rates making it too expensive for them to have adequate working capital. There is an exception of small loan amounts provided by MADB and poor farm yields imply that farmers must sell their assets including land to repay loans.

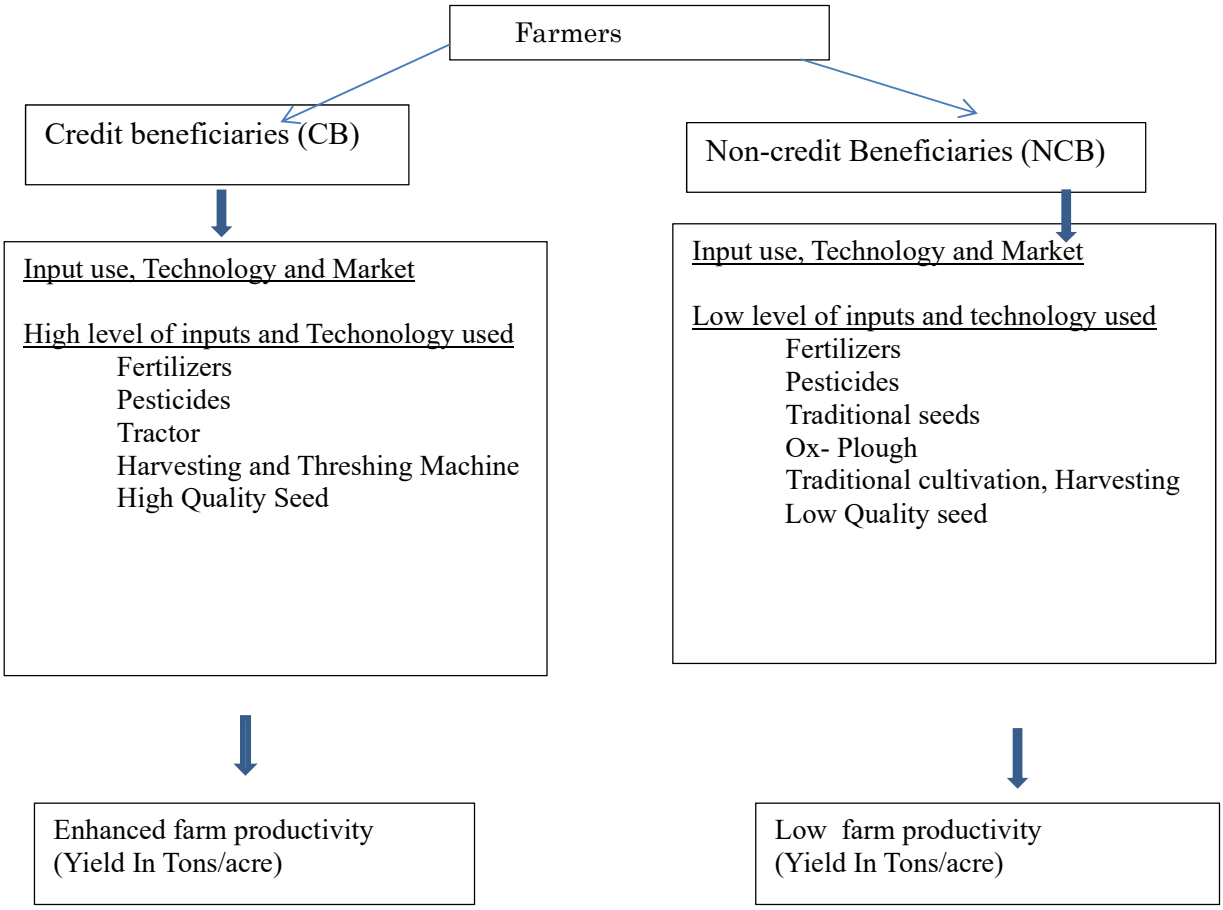
Additionally, there is serious lack of financing for equipment and few storage facilities in villages that can make it possible for farmers to store paddy and sell it later, potentially at a higher price than right after harvest, nor are there lenders that would provide credit using the stored harvest as collateral.

IV. RESEARCH METHODOLOGY AND DATA ANALYSIS

4.1 Conceptual Framework

The figure below shows the conceptual framework of microfinance and rice production. As shown, some people will access credit and other will not. This is largely due to the limited access of these loan services in rural areas. It is expected that those who will access credit will manage to improve their technological and farm input use. Inputs such as Agrochemicals (fertilizers, pesticides) and improved seeds are the focus of this analysis. Moreover, farmers who access loans are also expected to employ advanced technological equipment such as tractors, power tillers or ox-Plough

Figure 4: A Conceptual Framework for Linking Microfinance and Productivity of Rice

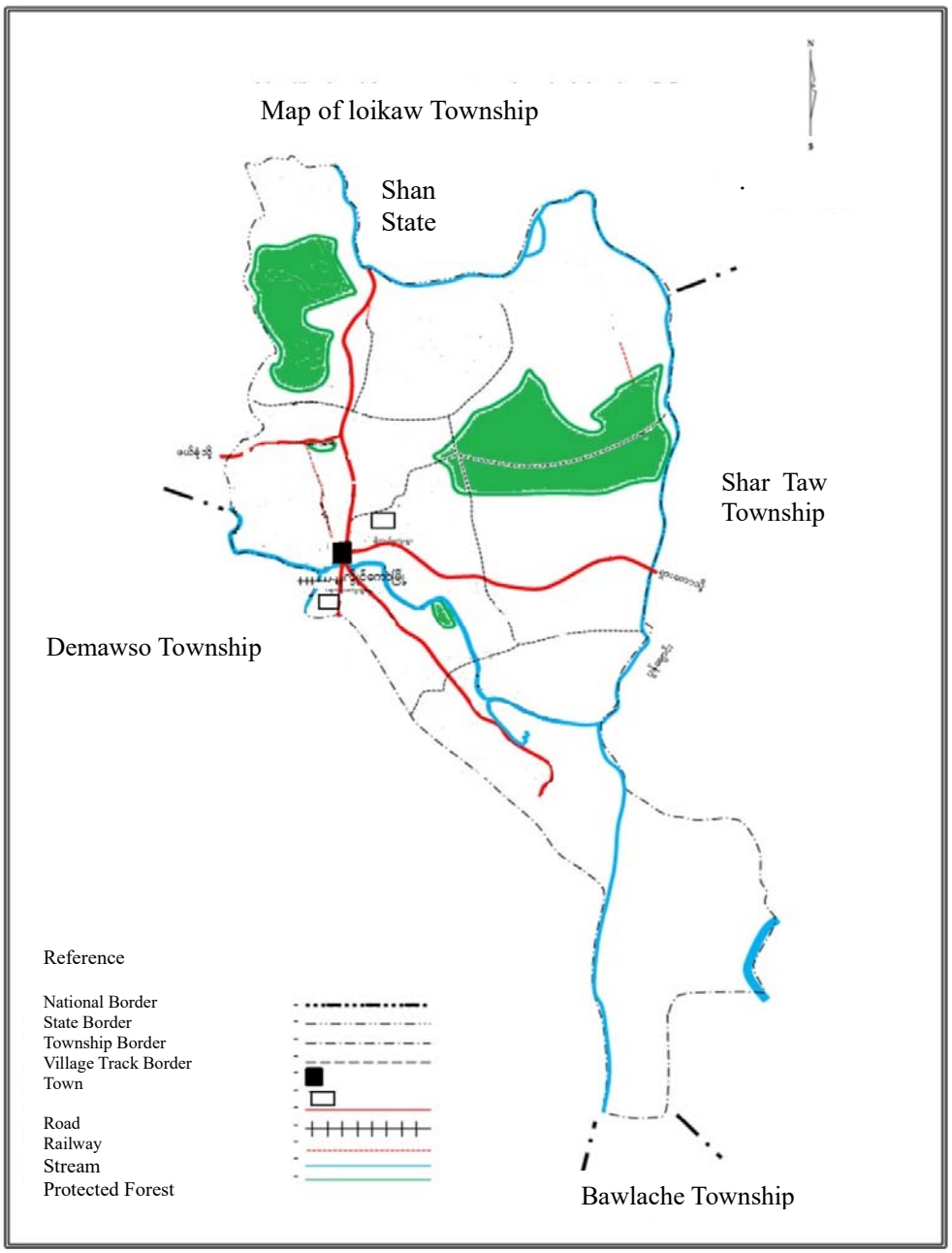


4.2 The Study Area

There is two districts in Kayah State and Loikaw District is one of these two Districts. " Loikaw Township" was purposely selected from "Loikaw District" because a major Microfinance Institution (MADB) is operating there and it covered only 15 % of major farmer who grow paddy. Geographically, Loikaw township lies between latitude 14° 20′ and 20° 59′ North and between longitude 97° 07′ and 97° 22′ East. Loikaw township is bordered to by Shartaw Township, West by Demawso township, South by Bawlache Township and North by Shan State. This township has an area of 1548.968 square kilometers. Total population is 128,401 people, of whom 63,109 are male and 65,292 are female. There are a total of 26,495 households in the

township. The climate at Loikaw township is dry and cold. The highest temperature is 37.2℃ in May and the lowest temperature is 5℃ in December. The mean annual rain fall is 895.35 mm.

Figure 5: Map of Studied Area



Source: Loikaw Township Administrative Office (Myanmar)

4.3 Research Design

Productivity of rice is expected to be high by farmers with CB (treatment group) compared to NCB (control group). Productivity may change depending upon changes in the types and quantities of inputs and technology used. It is also expected that, farmers who accessed credit will produce higher quality rice and will have opportunity to access markets. In this study the productivity of rice will be analyzed. The productivity is determined in terms of yield (ton) per acre.

4.4 Methodology

This study used households as a sample unit. Households were grouped into Credit Beneficiaries (CB) and Non-Credit Beneficiaries (NCB). There were 15,158 households who produced paddy during the monsoon season. Mostly, in Myanmar, farmers produce paddy twice per year, monsoon and summer seasons. In the study area, the main microfinance institution is Myanmar Agricultural Development Bank (MADB) and the loans to farmers are intended to be used to produce paddy for monsoon season. In each category 50 households were selected randomly into the sample. The research period was one year (2014) for primary data and only monsoon paddy production was focused.

Questionnaires were distributed and interviews were carried out. Structured and open ended questionnaires were designed in order to collect both qualitative and quantitative information from credit beneficiaries and non-beneficiaries, respectively. The questionnaires were designed and circulated to the farmers for in-depth data collection. The purpose of this interview was to collect specific information from each household in order to gain an understanding of the credit status, production and market patterns of the households. During this phase the data collected included socioeconomic characteristics, borrowed loan amounts, types of farming inputs used, type of farming technology, market access and prices as well as

productivity and production levels.

The main purpose of this study is to test a hypothesis on whether there is any significant impact of microfinance on the production of rice in Myanmar. Therefore, Hypothesis Tests for Differences between Means for Independent Samples were used. The T-test is applied to test the difference between means of variables of the two farmer categories and regression analysis is also conducted.

4.5 Method of Data Analysis

The main study of this study is to test a hypothesis on whether there is any significant impact of microfinance on production of rice for two household groups. Therefore Hypothesis Tests for Differences between Means for Independent samples is used. T –test is applied to test the difference between means of variables regarding the two farmer categories (i.e. CB and NCB) at 5% level of significant.

Mean Values

Mean value is calculated as follows:

$Z= (X_1 - X_2) - \sqrt{(S_1^2/n_1) + (S_2^2/n_2)}$

Where: X_1 and X_2 are output means of two groups;

S_1 and S_2 are sample variables for the two groups;

n_1 and n_2 are sample size for the compared groups.

H0: $\mu_1 = \mu_2$ (yield of paddy in Kg/acre) (The yield of paddy is no difference between two groups.)

Ha: $\mu_1 \neq \mu_2$ (The yield of paddy is difference between two groups)

If Z- value is greater than critical value – C, the null hypothesis can be rejected and conclude that there is a significant impact of microfinance on the productivity of rice.

Model of Quantitative Data Analysis

The linear regression analysis is expressed as follows:

$Q = f(X_1, X_2, X_3, X_4, X_5, X_6, X_7, X_8, X_9, X_{10}, X_{11}, X_{12}, X_{13}, X_{14}, X_{15})$

$Q = a + b_1X_1 + b_2X_2 + b_3X_3 + b_4X4 + b_5X_5 + b_6X_6 + b_7X_7 + b_8X_8 + b_9X_9 + b_{10}X_{10}$

$+ b_{11}X_{11} + b_{12}X_{12} + u$, Where,

Q = rice proudctivity (out per ton)
a = constant
b ‟s = coefficients to be estimated.
X_1 =Fertilizer
X_2= Seed
X_3= Pesticides
X_4= Cultivation Method
X_5 = Hired Labor
X_6 = Microfinance (Loan amount)
X_7 = Gender
X_8 = Water Pump X_9 = Gender
X_9 = Year of Schooling
X_{10}= Warehouse
X11= Harvesting and Threshing Machine
X12= irrigated
u = error term
H0: $\mu_1 = \mu_2$ (yield of paddy in Kg/acre) (The yield of paddy is no difference between two groups.)

Ha: $\mu_1 \neq \mu_2$ (The yield of paddy is difference between two groups)

V. FINDING AND POLICY IMPLICATIONS

5.1 Profile of Microfinance Institution in the Study Area

Table 6: Disbursement of loan for Paddy (Monsoon Season) in the Study Area

Village Tract	No.of Borrowers (farmers)	Area (Acre)	Amount (Kyat)
17	2289	11421	854800000

Source : Myanmar Agricultural Development , Loikaw Township (Myanmar)

In the study area, major microfinance institution for farmers is Myanmar Agricultural Development Bank. Table shows the disbursement of loan by MADB in 2014 for Loikaw Township. Loan interest rate is 8% per annum and the loan period is due 8 months the date after borrowing.

5.2 Demographic Information of Respondents

Table 7: Summary of respondents

Variables	Category	Frequency	Percentage
Gender	Male	93	93%
	Female	7	7%
Total		100	

Source: Researcher Survey, 2015

This table shows demographic information of the respondents in the study area. A large percentage of respondents were male. This is quite different from the experience observed that females are more active to access loan from microfinance institutions. This is because most household heads in rural area are males and land is registered in the names of household heads. Myanmar Agricultural Development Bank (MADB) gives the loan only to the farmers who registered their land.

Table 8: Education of Respondents

Variables	Category	Frequency	Percentage
Education Level	Do not go to school	10	10%
	Part Primary Education	18	18%
	Complete Primary Edu	17	17%
	Part secondary education	22	22%
	Completed secondary education	14	14%
	Part tertiary education	12	12%
	Complete tertiary education	2	2%
	Part university education	0	-
	Bachelor Degree	5	5%
	Master Degree and above	0	-
Total		100	

Source: Researcher Survey, 2015

Table (8) shows that respondents have different education levels. Years of schooling of household heads are used in this analysis.

Table 9: Age of Respondents

Variables	Category	Frequency	Percentage
Age	Below 20	0	-
	20-30	9	9%
	30-45	24	24%
	Over 45	67	67%
Total		100	

Source: Researcher Survey, 2015

The majority of respondents were aged over 45 years (67%) because the highest proportion of the age categories has more family responsibilities.

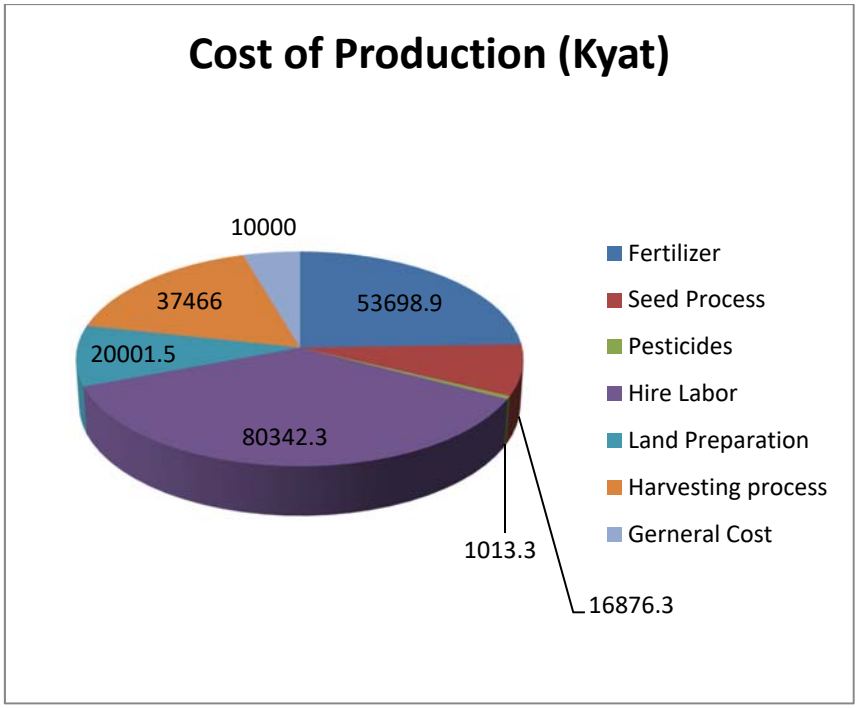
Table 10: Loan Amount by Credit Beneficiaries

Loan (Kyat)	no of beneficiaries	Proportion used for Agricultural
100000	1	100%
200000	9	100%
300000	10	100%
400000	8	100%
500000	19	100%
Total	50	

Source: Researcher Survey, 2015

An investigation on how the money was used in agricultural production show that the respondents from CB used 100% of the loan for agricultural use. The loan type is group lending and farmers have to be grouped and they must accept liability of individual loan and of the other group members' loan. Farmers can borrow 100,000 Kyats (nearly 80USD) per acre, but it is limited to 5 acres per farmers.

Figure 6: Average Cost of Rice (Paddy) Production per Acre in the Study Area



Source: Researcher Survey, 2015

Figure shows the average production cost of rice per acre of 100 samples from the study area.The cost of rice production includes farming activities, cost of nursing, land preparation, planting, fertilizer application, weeding harvesting and so on. In the process of production, the cost of hiring labor is the largest cost and it is found that pesticides is used very rarely. In general cost, transportation cost, monitoring and other cost are included.

Table 11: Productivity of the respondents

	CB	*NCB*
Mean	8.288137698	5.557139147
Variance	30.42170976	14.20130627
Observations	50	50
Hypothesized Mean Difference	0	
df	87	
t Stat	2.890859677	
P(T<=t) one-tail	0.002425328	
t Critical one-tail	1.662557349	
P(T<=t) two-tail	0.004850656	
t Critical two-tail	1.987608282	

Confidence Interval 95%

Source: Data Analysis from Researcher Survey, 2015

5.3 Paddy Productivity of Sample Farmers

In order to analyze whether there was any significant difference between the productivity of two groups (CB and NCB), t-test was applied to test data (Table.1). Output is measured in ton of paddy rice per acre. Results show a significant difference ($p<0.5$) in aggregate productivity of paddy between CB and NCB. CB produced on average of 8.288 tons of paddy per acre compared to 5.557 tons for NCB and Since t-Stat(2.89) is greater than t Critical Value (1.987), H0 can be reject and it is concluded that there is difference between two mean samples. This implies that, the farms managed by CB were more productive than those of the NCB.

5.4 Input Variables and Rice Production Circle

Following intervention areas and input variables in the rice production cycle can be identified.

1. Seed selection
2. Land preparation
3. Crop establishment
4. Water management

5. Soil fertility management

6. Pest management

7. Harvesting and threshing process

8. Drying and storage of Rice

5.4.1 Seed Selection

In Myanmar, most farmers use their own seed from year to year. And they don't have the systematical seed selection. The quality of seed is decreasing year by year and this can reduce the productivity of rice. Moreover, if the quality of seed is used, grain quality is poor and resulting into low market prices. In the study area, farmers who access microfinance can purchase improved seed and it effects significantly on the production of rice and they access good market price. Seed selection, therefore, is an important factor to improve the quality and production of rice.

5.4.2 Land Preparation

Most land rice fields in Myanmar were traditionally plowed with cattle or water buffalo. Nowadays, two wheel tractors are widely used and it is the best way to reduce land preparation time.

5.4.3 Hired labor

The continuous cultivation of paddy and other crops in Myanmar needs enough labor force to grow. Land preparation, transplanting and harvesting need to be finished in a short period of time. Thus, the farmers are faced with labor shortages, especially for these periods and have no time to rest.

5.4.4 Water Management

Rice is grown in Myanmar during 2 seasonal cycles, namely; the monsoon (June to November) and summer (December to May). Rain-fed lowland and irrigated lowland are the two main rice production systems in Myanmar. During the monsoon season, Myanmar's rainfall in the delta and coastal region is adequate for growing rice without supplemental irrigation from dams, river and stream diversions or ground water. Further, where available, irrigation coupled with drainage structures, improves stability of production and reduces the risks of flooding and stagnant water.

In some parts of the country, especially, dry zones, annual rainfall is erratic and insufficient for rainfed rice production. Irrigation becomes a crucial mechanism for growing rice in dry zones. Farmers in theses zones are concerned with access to water and completion for water is common during the dry season , especially where there is limited regulation and an absence of cooperative water management.

5.4.5 Soil Fertility Management

Based on the interviews from respondents, it is found that farmers use fertilizer to grow rice as a common input. Nitrogen (N), phosphorus (P) and potassium (K) are used as fertilizer and cattle manure, or cow dung is also used as organic fertilizer for soil fertility. Some farmers used composted cow manure or chicken dung for soil fertility and that can provide numerous benefits to the paddy fields.

5.4.6 Harvesting and threshing process

Generally paddy is harvested by labor manually including family members. Some of those farmesrs use combine harversters that operate both for harvesting and threshing. Some farmers, however, use cattle to thresh through trampling in a traditional way.

5.4.6 Drying and Storage of Rice

Farmers usually sun-dry their rice on any location available to store or resell. Sometimes it leads to dry the grain more than necessary . As a results, some proportion of grain is broken and tends to impurities and leads to low quality of rice.

After drying the grain, some farmers use were house for storage. Some proportion of rice of rice is used for current consumption while other proportion is stored as unhulled rice for later sale of later consumption. At the same time, it is found that some farmers sell all of the proportion to repay their obligations.

Table 12: Regression Analysis of Determinants of Paddy Production

```
Linear regression                               Number of obs =     100
                                                F( 12,    87) =   33.62
                                                Prob > F      =  0.0000
                                                R-squared     =  0.7101
                                                Root MSE      =   2.812
```

outputton2	Coef.	Robust Std. Err.	t	P>|t|	[95% Conf.	Interval]
fertilizeramount	.0023302	.0010245	2.27	0.025	.000294	.0043664
seeds	2.795939	1.280289	2.18	0.032	.2512248	5.340653
pesticides	-.133054	.2051325	-0.65	0.518	-.540777	.274669
cultivation	-1.140876	.9106323	-1.25	0.214	-2.950856	.6691044
hiredlobor	.0525067	.0103599	5.07	0.000	.0319153	.0730981
get_loan	2.221237	.6252231	3.55	0.001	.9785381	3.463935
gender	1.080528	.9380668	1.15	0.253	-.7839811	2.945037
harvestingmachine	1.948551	.8118896	2.40	0.019	.3348321	3.562269
warehouse	1.123325	.6187074	1.82	0.073	-.1064226	2.353073
irregated	1.409851	.5873278	2.40	0.019	.2424729	2.577228
Age	.0141086	.0202261	0.70	0.487	-.0260931	.0543103
yearofschooling	.1740362	.0815297	2.13	0.036	.0119871	.3360853
_cons	-4.250019	1.659068	-2.56	0.012	-7.547595	-.9524418

```
. estimates table, star(.05 .01 .001) style(oneline)
```

Variable	active
fertilizer~t	.00233023*
seeds	2.7959388*
pesticides	-.133054
cultivation	-1.1408759
hiredlobor	.0525067***
get_loan	2.2212367***
gender	1.0805281
harvesting~e	1.9485506*
warehouse	1.1233253
irregated	1.4098506*
Age	.0141086
yearofscho~g	.1740362*
_cons	-4.2500186*

legend: * p<.05; ** p<.01; *** p<.001

Source: Data Analysis from Researcher Survey, 2015

5.5 Determinants of Paddy Production

Results obtained from linear regression analysis of households describe significant impacts on rice production for variables of fertilizer, improved seed, hired Labor, get loan, harvesting machine, irrigated and year of schooling. An increase in fertilizer of one kilogram leads to 0.0023 tons increase in rice production. An increase in improved seed of one unit increases rice productivity by 2.796 tons, while 1 unit increase in hired labor increases leads to 0.525 tons of increase in rice productivity. On the other hand, increasing one person who gets microfinance increases leads to 2.221 tons increase in rice production. Further, 1 unit increase in use of Harvesting machine also increases productivity of rice by 1.948 tons. One acre increase in irrigated land increases rice productivity 1.4 tons and 1 unit increase in years of schooling results in 0.174 tons increase in productivity of rice.

Gender and age of household head can be seen as the variables that do not impact on the rice production in the study area. The dummy variable of cultivation method expresses negative and not significant statistically. This shows that farmers who used oxplough for cultivation are more productive than who used tractors. One possible answer is farmers who used ox-Plough cultivation method plowed deeply and more carefully. The coefficient of pesticide implies no significance, but negative relation with the production of rice. This is because of most farmers in Myanmar rarely use pesticides in advance in the production process of rice paddy. Pesticide is only used when the paddy field is affected by insect. That is why, using pesticide account for smallest percentage of input in the study area.

It is also found that credit assess by farmers also improves market access for rice. Farmers who accessed credits were able to pay for hired labor and can use improve seeds and higher amount of fertilizer leading to higher yield and higher quality of rice. Consequently, the quality of rice increases market accessibility.

5.6 Credit Evaluation on Respondents

Information collected from the respondents imply that all credit beneficiaries can repay the loan to the microfinance institution. Since the type of loan is group lending and they must accept liability of individual loan and other group members' loans. If one person from the group cannot repay the loan, all group members cannot borrow from the institution again. That is why, borrowers have to try to repay the loan. However, there are some exceptions to repay the loan in some conditions. If paddy fields are swamped by rains and flooding or affected by natural disaster across the country, borrowers can postpone the loan or regional government lends money to the farmers to repay the loan to the institution they borrowed from.

5.7 Conclusion

The results of data analysis show a clear impact of microfinance on the production of rice. Farmers who access credit can purchase higher level inputs such as quality seed and use more labor and more fertilizer.This paper, through evidence from household survey in the study area finds that microfinance has contributed largely to an increase in the production of rice in Myanmar. It supports some previous analyses that found similar positive impact of microfinance on low income people.

If the government reduce of remove the agricultural subsidies such as a pool of money, fertilizer, improved seed, it might lead to increase the cost of those agricultural inputs for farmers. This research report implies that inputs significantly impact the production of rice in the study area. The findings presented in this research paper will be of partial important for the rice production and its potentials in achieving higher quality and productivity. In addition, it will be important to reduce poverty within the country by increasing the amount of loan for farmers.

Therefore, lack of access to credit is a major problem for farmers to apply improved seeds, adequate amount of fertilizer and to use enough labor and modern technology that improves rice prouction. In rural areas, there are a number of credit sources with different terms and conditions. While some farmers from most area can borrow agricultural loan from Myanmar Agriculture and Development Bank (MADB) with an interest rate of around 1 percent per month and can borrow for 8 months in every year, others cannot access this loan services. Since, the MADB loans cover 15 percent of the total land areas in the study area, inadequate amount of credit and lack of access to credit imposes relatively heavy cost on rice production.

Although there are pawn shops with fair interest rates (3parcent per month), gold or jewellery is needed as collateral to borrow money from those shops. Therefore, farmers have to borrow from informal money informal sector with high interest rate. Sometimes they have to buy inputs such as fertilizer from fertilizer distributors in debt by agreeing to repay the debt with high interest rate and they have to sell their paddy at harvest time with low price to pay back the debt. The interest rates of informal lending are about 10 to 20 percent per month depend on the informal lender. This makes it difficult for small farmers to escape from their debts.

5.8 Policy Recommendation

The main objective of this study was to investigate the impacts of microfinance on the production of rice with a case study. The Findings describe a significant difference in used inputs and productivity of rice between the two groups who access microfinance and do not access. The rice productivity by the CB group was relatively high compared to the NCB group. A linear regression analysis reveals that inputs used such as, fertilizers, improved seeds, hired labor and water management system and year of schooling had significant impact on agricultural productivity. Moreover, CB were also relatively better plaed to access agricultural markets and

getting good prices because of higher quality of their rice. Therefore, the null hypothesis was rejected and CB group is more productive than NCB.

Therefore, formal credit with low interest rate, in production of rice, increases the net profit that is obtained from higher quality rice and fixed inputs used. Farmers who borrow from informal sector, however, with higher interest rate reduces net profit. In addition, constraint to credit accessibility reduces the economic efficiency of farmers to produce rice. It is recommended that government shoud encourage the formal private with fair interest rates both for farmers and lenders.

Indeed, credit accessibility has significant impacted on rice productivity in the study area. Due to the complexity of registration process, non registration of land is also a constraint factor to access microfinance .Consequently, loans available to these farmers are limited and cover only 15 percent of total land area.

It is recommended that numerous conditions and unnecessary procedure in land registration process should be minimized in order to increase registered land.Since irrigation can be seen as important to the agricultural production system, modern irrigation system should be developed. The study finding on the impact of years of schooling suggests that there should be an improved and quality education system in the rural area and government should consider public investment for education in theses areas. Some traditional farming methods are not productive and in order to support mechanization, more effective credit system with a means to ensure repayment of loans should be developed. Technical assistance is also needed to provide this type of loans. Further, the government should collaborate with development partners and build capacity for farmers to use credit effectively and efficiently.

APPENDICES

APPENDIX

Survey Questionnare For Farmers

Introduction

My name is Swe Zin Aung. I am staff officer at Planning Department under the Minister of National Planning and Economic Development. I am also a master's student at KDI School of Public Poliy and Management. I am conducting a study on 'Impacts of Microfinance on the Production of Rice in Myanmar". The purpose of this study is to write my master thesis. The findings will enable the relevant policy makers to use it for designing development policies to help farmers.

CONFIDENRIALITY AND CONSENT:

I am going to ask some personal questions and request you to feel free to respond to those your comfortable with. The answer you gave me are completely confidential and will remain secret. Your name will not be written on this form and will never be used the information you tell me.

Thank you for your kind participation.

Questionnaire for Farmers who grow paddy (Only for 2014 Rain Paddy, Last year)

Part A. Background Information

1.Household Head

Male

Female

2. Age

Below 20 years

20 to 30

31 to 45

46 years and above

3.Nationality

4.Education

Completed Primary Education

Part primary education

Part secondary education

Completed secondary education

Part tertiary education

Complete tertiary education

Part university education

Bachelor Degree

Master Degree and above

Did not go to school

5.The land used for growing paddy (2014) (acres)

B. Information for credit beneficiaries (for 2014)

6. Name of Microfinance Institution (spicify if there is more than 1)

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8. What loan products are available?

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9. Clients borrows as an individual or in a group?

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10. What are the eligibility requirements? Please explain each?

---

11. What was the loan amount you borrowed?

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12. What is the loan repayment period?

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13. What is the loan repayment frequency? Are loans paid monthly or after harvest?

---

14. What is the cost of borrowing? (all of the loan fee)

---

15. Could you pay back the loan when it was due.

Yes

No

If No, is there any possibility to get microfinance from that Microfinance Institution again.

16. What are the penalties if a borrower defaults?

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17. What are the penalties if a borrower is in arrears?

---

18. Why you could not pay back the loan when it was due.

Interest is high.

Loan duration is short.

The productivity of rice was not covered to pay back the loan.

I used it for my informal debt.

Others…….

19. Proportion of loan used for growing paddy

100%

75%

50%

25%

Not used

20. Was microfinance enough to grow paddy.

Yes

If not, how much percentage was covered to grow paddy.

21. Interest Rate

1%

1.5%

2%

2.5%

3% and above

22. Do you think the interest rate is high?

No

Yes

23. If yes, how much should it be?

C. Information for Non-Credit Beneficiaries

24. Why didn’t borrow the loan from microfinance institution?

Not eligible

Didn’t need.

25. Although needed, if you are not eligible, did you borrow from informal lender?

26. Interest Rate from informal lender?

D. Information for Cost of Production (for 2014)

27. Did you use technology or traditional method for land preparation?

Labor used for land preparation.

Cost of production of land preparation

28. Did you used technology or traditional method for seed process.

Labor used in seed process (including family members)

Cost of production of seed process

29. Did you use machine of labor for transplanting Process.

If used, how much did it cost?

30. Hired labor for transplanting process. (Including family member)

---

31. Harvesting Process

Did you use machine or men for harvest.

If you used the machine, how much did it cost? (The machine is owned or hired)

If you used men, hire labor (including family members)

---

32. Seed

What kind of seed was used to grow paddy.

Improved seed

Ordinary seed

How many bags of seed were used for seedling?

---

33. Fertilizer used

Did you used fertilizer to grow paddy?

Yes,

No.

If yes,What kind of fertilizer did you use?

Urea, Compound, Chicken dung, Potash, others

The cost of fertilizer used.----------

34. Did you used Pesticide to grow paddy?

Yes,

No.

If yes,The cost of Pesticide used? ----------

35. Production cost for growing paddy (from land preparation to harvest)

36. Estimated cost of production of paddy. (including labor cost)

37. Yield of paddy in last year.

---

38. How much percentage of paddy did you use for your family consumption?

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39. How much percentage of paddy did you sell?

---

40. Was is easy to sell paddy in the market?

D. Tools used for growing paddy.(For both credit Beneficiaries and non credit Beneficriaries)

(a) Plough

(b) Horrow

(c) Bullock

(d) Cart

(e) Tractor

(f) Trailer

(g) Power Trailer

(h) Inter-Cultivator

(i) Seeder

(j) Sprayer

(k) Water Pump

(l) Harvesting Machine

(m) Threshing machine

(n) ware house

(o) sown acerage

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